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Proposal for the development of F.I.M.P (Fully inovated mini project)  
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# Executive Summary

As a student in the Computer Engineering Technology program, I will be integrating the knowledge and skills I have learned from our program into this Internet of Things themed capstone project. This proposal requests the approval to build the software app that will connect to a hardware as well as to a mobile device application. In the app, we will have camera incorporated along with a controller, that will be used to control the hardware. The database will store the coordinates of the robot arm and the angles that the motor and arms need to be when it returns to rest position. The mobile device functionality will include some very basic test functions and commands to move the arm, it will also include a camera that user can use to help them interact with their environment from a safe distance. It will log any lags or imperfections and save that data, so the developer can later look it at and make improvements to the hardware or software. In the winter semester I plan to form a group with the following students (Alay Lad, Saad Qazi, Tanav Sharma), who are also making similar app this term and working on the mobile application with Tanav Sharma, Alay Lad, Saad Qazi. The hardware will be completed in CENG 317 Hardware Production Techniques independently and the application will be completed in CENG 319 Software Project. These will be integrated together in the subsequent term in CENG 355 Computer Systems Project as a member of a 2 or 3 student group.

# Background

This project will solve many problems. Along with solving problems it will also be very innovative. It will help gamers with better precision, and interact with games. With the haptic feedback feature it will create a real life experience for the user and allow them to make better decisions. Scientists and engineers can use this arm, for experiments where they need to have certain amount of distance clearance from the test site. It can also withstand great amounts of temperature that the normal human hand or body wont be able to bear. Scientists can deal with hot object like lava rocks, or other hot surfaces. These arms can also be used in space, where the astronauts can use the arm from their space ship. With the help of the app, and the integrated camera it will allow users to interact with the environments outside of their reach, and capabilities. Also the app will be saving information received from the arm, and provide logs, so the user can use it to make his/her reports and also use the information to make changes to better the app or hardware.